Patient safety: Evaluation of the impact of nursing hours per patient day staffing method in Western Australia

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Doctor of Philosophy

2009

Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

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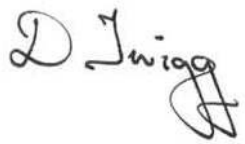

Acknowledgements

I wish to express my deep gratitude and sincere thanks to the following people who have given me sound advice, great support and consistent encouragement throughout this doctoral journey. Firstly, my principal supervisor Professor Christine Duffield who demonstrated great skill in keeping me focussed on the task at hand and in teaching me the art of academic writing. Her knowledge and understanding in the areas of leadership, workforce and patient outcomes were the source of many great discussions and were invaluable in assisting me to undertake this study. I would also like to acknowledge and thank my co supervisor, Dr Patricia Rapley. Pat's eye for detail and thoroughness was greatly appreciated. My thanks also go to Cecily Gilbert, the hospital librarian. Her assistance in establishing key literature searches, sourcing articles and proof reading the thesis was greatly appreciated. I would also like to thank The Western Australian Nurses Memorial Charitable Trust for their generous grant which was of enormous benefit to me in conducting this research. It enabled me to employ a research assistant to assist with data cleansing and to seek the advice of a biostatistician. My thanks also go to Norjin Kelsang, my research assistant, for her thorough attention to detail and Dr Alex Bremner for her invaluable statistical advice and supervisory support to the method and results chapters. I would also like to acknowledge Professor Judith Finn for her advice in regard to the SPSS syntax and Judy Ewing for her valuable editing advice. Finally, I would like to thank my good friend and colleague, Sue Davis for her encouragement to undertake this work and her notorious sense of humour and 'one liners' that assisted me in keeping this work in perspective.

Table of Contents

List of Tables

List of Figures

Abstract

In March 2002 Western Australia (WA) mandated a new staffing method—nursing hours per patient day (NHPPD). This method used a "bottom up" approach to classify each hospital ward into one of seven categories using characteristics such as patient complexity, intervention levels, the presence of high dependency beds, the emergency/elective patient mix and patient turnover. Once classified, NHPPD were prescribed for each ward. The purpose of this study was two-fold focusing on data from three adult tertiary hospitals (four of seven ward categories: A, B, C and D combined), and individual ward categories A, B, C and D at one adult tertiary hospital. The first purpose was to determine the impact of implementing this staffing method (NHPPD) on nursing-sensitive outcomes (NSOs). The second was to determine the relationship between skill mix and NSOs following implementation of NHPPD. The research design was an interrupted time series and used retrospective analysis of administrative data. Patient and staffing data using the NHPPD method over a four year period were analysed. The 14 NSOs were central nervous system (CNS) complications, wound infections, pulmonary failure, urinary tract infection, pressure ulcer, pneumonia, deep vein thrombosis, ulcer, gastritis and upper gastrointestinal bleed, sepsis, physiologic/metabolic derangement, shock/cardiac arrest, mortality, failure to rescue and length of stay.

The study found significant decreases in the rates of nine NSOs when examining hospital-level data following implementation of NHPPD (including mortality, sepsis and pneumonia). At the ward level, significant decreases in the rates of five NSOs (including mortality, shock/cardiac arrest and UTIs) occurred. Significant decreases in rates of eight NSOs (including failure to rescue, mortality and pneumonia) occurred with each 1% increase in RN hours across the three hospitals. At ward category level, significant decreases in the rates of five NSOs occurred with every 1% increase in RN hours (including failure to rescue, DVT and pneumonia).

The findings of this study suggest a richer skill mix, even with relatively small changes (1%), continues to benefit patients by improving NSOs. This study also provides nurse leaders with evidence to support the continuation of the NHPPD staffing method. It also adds to evidence about the importance of nurse staffing to patient safety, evidence that

must influence policy. Moreover, this study is one of the first to empirically review a specific nurse staffing method, based on an individual assessment of each ward to determine staffing requirements, rather than a "one-size-fits-all" approach.